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Perspectives in Disease Prevention and Health Promotion

Smoking-Attributable Mortality and Years of Potential Life Lost — United States, 1984

Cigarette smoking has been identified as the chief avoidable cause of death in the United States (*1*). Several estimates of mortality attributable to cigarette smoking have been reported, including 270,000 deaths for 1980 (*2*) and 314,000 deaths for 1982 (*3*). Published estimates vary considerably because of changing mortality rates, decreasing smoking rates, and differences in methods used. Smoking-attributable mortality and years of potential life lost (YPLL) for 1984 are analyzed in this report.

Relative risk (RR) estimates for smoking-related diseases and prevalence estimates of current, former, and never smokers among adults ≥20 years of age were used to calculate the smoking-attributable fraction (SAF) and smoking-attributable mortality for 19 underlying causes of death (*2*) (Table 1).* Age-, sex-, and race-specific mortality data for 1984 were obtained from National Center for Health Statistics reports. Age-, sex-, and race-specific smoking prevalence rates were obtained from the 1985 Current Population Survey (Supplement) of the Bureau of the Census (Office on Smoking and Health, CDC, unpublished data). Years of potential life lost were calculated to age 65 according to previously described methods (*6*). Age-adjusted smoking-attributable mortality and YPLL rates were calculated by the direct method, with the 1984 U.S. population used as the standard.

For deaths among adults, the disease-specific SAFs are derived from RR estimates for current and former smokers that are weighted averages from four prospective studies (*7-10*). RR estimates for women based on these studies may be lower than the current RRs for many of the specific smoking-related diseases among women. However, the SAF for lung cancer among women (0.75) has been updated based on RR estimates from more recent mortality data (*11*). Race-specific RR estimates for smoking-attributable diseases were not available.

*The equation for calculating the smoking-attributable fraction of each disease category is:

$$SAF = \frac{[p_0 + p_1(RR_1) + p_2(RR_2)] - 1}{[p_0 + p_1(RR_1) + p_2(RR_2)]}$$

where p_0 = percentage of never smokers, p_1 = percentage of current smokers, p_2 = percentage of former smokers, RR_1 = relative risk for current smokers (relative to never smokers), and RR_2 = relative risk for former smokers (relative to never smokers) (*4*). This formula is derived from the standard attributable risk (AR) formula (*5*): $AR = p(RR - 1)/[p(RR - 1) + 1]$.

Smoking — Continued

For four pediatric diagnoses, the mortality attributed to maternal smoking during pregnancy for children<1 year of age was determined. These calculations used RR estimates from McIntosh (*12*) and current smoking prevalence among women 20-64 years of age as a proxy for the percentage of pregnant women who smoke. The RR (1.50) for sudden infant death syndrome from McIntosh (*12*) was used, but the RR (1.76) for total infant mortality reported by McIntosh was used to calculate the SAF for

TABLE 1. Total mortality, weighted smoking-attributable fractions (SAF), and smoking-attributable mortality (SAM), by disease category and sex — United States, 1984

Disease Category*		Males			Females			Total SAM†
		Deaths	SAF	SAM	Deaths	SAF	SAM	
Adults ≥20 years old								
Neoplasms:								
140-149	Lip, oral cavity, pharynx	5,754	0.688	3,958	2,689	0.413	1,110	5,068
150	Esophagus	6,310	0.589	3,717	2,345	0.536	1,257	4,974
151	Stomach	8,468	0.172	1,455	5,772	0.254	1,467	2,922
157	Pancreas	11,513	0.300	3,459	11,634	0.142	1,653	5,112
161	Larynx	2,959	0.806	2,385	664	0.413	274	2,660
162	Trachea, lung, bronchus	82,459	0.796	65,659	36,227	0.750	27,170	92,829
180	Cervix uteri	0	0.0	0	4,562	0.369	1,685	1,685
188	Urinary bladder	6,597	0.371	2,447	3,114	0.274	853	3,299
189	Kidney, other urinary	5,424	0.243	1,319	3,403	0.118	403	1,722
Circulatory diseases:								
401-405	Hypertension	13,464	0.156	2,099	17,855	0.148	2,645	4,744
410-414	Ischemic heart disease < age 65	78,340	0.286	22,362	27,000	0.181	4,892	27,253
410-414	Ischemic heart disease ≥ age 65	211,003	0.159	33,461	224,756	0.075	16,816	50,276
427.5	Cardiac arrest	19,392	0.399	7,745	17,296	0.344	5,950	13,695
430-438	Cerebrovascular disease	59,185	0.096	5,692	88,285	0.139	12,228	17,920
440	Arteriosclerosis	9,235	0.238	2,200	15,216	0.315	4,797	6,996
441	Aortic aneurysm	10,323	0.624	6,444	4,791	0.468	2,244	8,689
Respiratory diseases:								
480-487	Pneumonia, influenza	28,774	0.208	5,986	28,935	0.093	2,679	8,664
491-492	Chronic bronchitis, emphysema	10,708	0.850	9,097	5,517	0.694	3,831	12,928
496	Chronic airways obstruction	31,240	0.850	26,541	16,625	0.694	11,545	38,085
Digestive diseases:								
531-534	Ulcers	3,251	0.479	1,556	3,365	0.445	1,497	3,053
Pediatric diseases, <1 year old								
765	Short gestation, low birthweight	1,729	0.182	314	1,533	0.182	279	593
769	Respiratory distress syndrome	2,178	0.182	396	1,379	0.182	251	647
770	Other respiratory conditions of newborn	1,982	0.182	360	1,515	0.182	275	636
798.0	Sudden infant death syndrome	3,176	0.128	405	2,069	0.128	264	669
Total†				**209,057**			**106,063**	**315,120**

*International Classification of Diseases, ninth revision.
†Sums may not equal total because of rounding.

Smoking — Continued

only three specific infant death categories (short gestation/low birthweight, respiratory distress syndrome, and other respiratory conditions).

An estimated 315,120 deaths and 949,924 YPLL before age 65 years resulted from cigarette smoking in 1984 (Table 2). The smoking-attributable mortality rate among men is more than twice the rate among women, and the rate among blacks is 20% higher than the rate among whites (Table 3). The smoking-attributable YPLL rate among men is more than twice the rate among women, and the rate among blacks is more than twice the rate among whites (Table 3).

Reported by: Office on Smoking and Health, Center for Health Promotion and Education, CDC.

Editorial Note: The total smoking-attributable mortality and YPLL reported here is similar to that cited in previous reports (*2,3*), showing that the disease impact of smoking in the United States continues to be enormous despite recent declines in the prevalence of smoking. These figures do not include mortality and YPLL due to peripheral vascular disease (for which specific RR estimates are generally lacking), cancer at unspecified sites, cigarette-caused fires, or involuntary (passive) smoking. In 1984, an estimated 1,570 deaths were attributed to cigarette-initiated fires (*13*); an estimated 3,825 nonsmokers per year die from lung cancer attributed to involuntary smoking (*14*). When the figures for fires and involuntary smoking are included, the estimated total of smoking-attributable deaths in the United States in 1984 is 320,515, or 15.7% of all (2,039,369) U.S. deaths. Total smoking-attributable YPLL (949,924) represents 8.1% of all (11,761,000) U.S. YPLL before age 65 (excluding YPLL due to cigarette-caused fires or involuntary smoking).

Among blacks, the smoking-attributable mortality (32,779) represents 13.9% of total 1984 mortality (235,884), whereas the smoking-attributable mortality for whites (279,636) was 15.7% of total 1984 mortality (1,781,897), excluding deaths due to fires

TABLE 2. Estimated smoking-attributable mortality and years of potential life lost (YPLL)*, by race and sex — United States, 1984

	Mortality			YPLL		
	Males	Females	Total†	Males	Females	Total†
Whites	184,296	95,340	279,636	489,827	199,590	689,418
Blacks	22,647	10,131	32,779	129,952	63,473	193,425
Total population§	**209,057**	**106,063**	**315,120**	**661,651**	**288,273**	**949,924**

*YPLL before age 65.
†Sums may not equal total because of rounding.
§Includes whites, blacks, and racial category "other."

TABLE 3. Age-adjusted smoking-attributable mortality rates* and years of potential life lost (YPLL) rates†, by race and sex — United States, 1984

	Mortality rate			YPLL rate		
	Males	Females	Total	Males	Females	Total
Whites	189.7	64.2	119.0	5.56	2.17	3.81
Blacks	236.5	75.5	143.2	12.07	4.85	8.14
Total population§	**192.6**	**68.0**	**133.2**	**6.53**	**2.71**	**4.56**

*Per 100,000 persons (population data from 1984 U.S. Census).
†YPLL before age 65/1,000 persons <65 years (population data from 1984 U.S. Census).
§Includes whites, blacks, and racial category "other."

Smoking -- Continued

or involuntary smoking. However, the smoking-attributable mortality rate and YPLL rate were higher among blacks than among whites. These differences in rates reflect a higher prevalence of smoking and a higher mortality rate from smoking-related diseases among blacks. Higher YPLL rates among blacks may also reflect more smoking-attributable deaths at earlier ages. Because blacks tend to smoke fewer cigarettes per day than whites (*15,16*), the difference in smoking-attributable mortality and YPLL rates between blacks and whites may be slightly overestimated. On the other hand, the RR of smoking-related diseases among blacks may be higher than the RR estimates used here because of increased interactions between smoking and other risk factors, different tar and nicotine exposures, or different smoking patterns. Still, these findings support previously cited concerns regarding the increased burden of smoking-related disease among blacks (*17*).

Smoking prevalence for 1985 was used to calculate the SAFs in this study. However, the 1984 smoking-related mortality is a result of a higher smoking prevalence during the 1950s, '60s, and '70s, the decades during which these diseases were developing. Therefore, the SAFs used here are conservative.

CDC has examined YPLL before age 65 years since 1979 (*6*). In this study, most smoking-related deaths (218,691, or 69.4%) occurred among persons ≥65 years of age. Thus, the smoking-attributable YPLL among persons<65 reported here (949,924) is substantially lower than the 3.6 million smoking-attributable YPLL calculated when the average life expectancy in the United States is used for calculating YPLL for 1984.

Group-specific calculations such as these are possible for states and other defined populations if mortality and smoking prevalence data for those populations are available. A computer program has recently been developed to aid in calculating mortality and YPLL attributed to cigarette smoking (*18*). CDC is now collaborating with all 50 state health departments, Puerto Rico, and the District of Columbia to perform similar studies. Results from this project will be reported in 1988.

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Smoking — Continued

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Epidemiologic Notes and Reports

Outbreak of Influenza-Like Illness in a Tour Group — Alaska

A 56-year-old Vermont resident began having influenza-like symptoms on August 25, while on a cruise ship off the coast of Alaska. Serum specimens collected from the patient showed a fourfold rise in hemagglutination inhibition titer, indicating infection with a contemporary strain of influenza A(H3N2) virus. The patient had been one member of a group of 35 (34 residents of Vermont, one from New Hampshire) that had departed for Alaska on August 15 and had spent the period August 22-26 on a cruise ship traveling along the Alaskan coast. Telephone interviews with all group members revealed that 19 (54%) had had a respiratory illness (fever or feverishness, and at least two of the symptoms of cough, coryza, sore throat) between August 23 and September 2; onset was August 25 for seven persons (37%). The mean age of the persons who became ill was 62 years, similar to that of the entire group. Anecdotal reports suggest high rates of respiratory symptoms among the approximately 600 other tourists on the vessel. Further serologic evidence for the occurrence of type A(H3N2) influenza infection among the tourists from Vermont is being sought. No other outbreaks of influenza-like illness or confirmed influenza infections have been reported in Alaska.

Reported by: RP LaFiandra, MD, Addison County, Vermont; State Laboratory Directors and Epidemiologists, Alaska and Vermont. Div of Field Svcs, Epidemiology Program Office; Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: Although additional laboratory evidence of influenza infection is still being sought, it is likely that a cluster of influenza A(H3N2) infections occurred in the tour group from Vermont. Recent reports from the World Health Organization describe the circulation of type A(H3N2) strains in several Asian and Pacific nations from about April to September. Considering the large numbers of people traveling through Alaska who are residents of, or visitors from, countries of Asia and the Western Pacific, importation of the virus into Alaska in the late summer is to be expected.

Influenza — Continued

The occurrence of an early outbreak of influenza A(H3N2), coupled with the lack of activity of type A(H3N2) virus in the United States last winter, suggests that this subtype will be at least partially responsible for the influenza activity of the coming season. Traditionally, type A(H3N2) viruses, in contrast to type A(H1N1) viruses, have spread to older persons (as in the Alaskan outbreak) and have been responsible for most mortality and excess hospitalizations, as well as causing increases in clinic visits and absenteeism from the workplace or classroom. Actions to reduce this impact are detailed in the recommendations of the Immunization Practices Advisory Committee (ACIP) (*1*) and in the proceedings of a recent symposium (*2*). In particular, these measures include vaccinating persons being treated for cardiopulmonary disease, residents of chronic-care institutions, persons over 64 years of age, and any other

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TABLE I. Summary — cases of specified notifiable diseases, United States

Disease	42nd Week Ending			Cumulative, 42nd Week Ending		
	Oct. 24, 1987	Oct. 18, 1986	Median 1982-1986	Oct. 24, 1987	Oct. 18, 1986	Median 1982-1986
Acquired Immunodeficiency Syndrome (AIDS)	486	375	N	15,293	10,572	N
Aseptic meningitis	235	253	299	9,319	8,454	8,153
Encephalitis: Primary (arthropod-borne & unspec)	21	27	44	1,057	975	1,043
Post-infectious	2	1	-	87	80	90
Gonorrhea: Civilian	13,099	18,379	19,503	623,735	715,632	716,749
Military	173	463	501	13,018	13,533	17,299
Hepatitis: Type A	432	466	484	19,704	18,148	18,073
Type B	445	477	506	20,461	20,811	20,755
Non A, Non B	44	69	N	2,392	2,866	N
Unspecified	39	63	166	2,521	3,564	4,623
Legionellosis	21	26	N	703	620	N
Leprosy	14	1	4	170	208	200
Malaria	12	27	22	714	925	847
Measles: Total*	27	25	25	3,473	5,631	2,385
Indigenous	18	23	N	3,068	5,337	N
Imported	9	2	N	415	294	N
Meningococcal infections: Total	46	36	40	2,322	2,039	2,213
Civilian	46	36	40	2,321	2,037	2,206
Military	-	-	-	1	2	6
Mumps	91	48	55	10,936	4,064	2,679
Pertussis	44	394	50	2,013	3,151	1,974
Rubella (German measles)	-	1	6	313	483	842
Syphilis (Primary & Secondary): Civilian	745	518	617	28,531	21,233	22,535
Military	1	3	4	131	134	249
Toxic Shock syndrome	6	5	N	269	286	N
Tuberculosis	377	352	449	16,996	17,590	17,590
Tularemia	6	7	4	169	126	214
Typhoid Fever	8	4	13	263	261	312
Typhus fever, tick-borne (RMSF)	12	21	13	558	679	771
Rabies, animal	67	103	107	3,815	4,558	4,558

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1987		Cum. 1987
Anthrax	1	Leptospirosis (Ohio 1; Tex. 1; Hawaii 2)	22
Botulism: Foodborne	10	Plague	9
Infant	42	Poliomyelitis, Paralytic	-
Other	-	Psittacosis	68
Brucellosis (Fla. 1; Idaho 1)	93	Rabies, human	-
Cholera	4	Tetanus (Pa. 1)	35
Congenital rubella syndrome	5	Trichinosis	32
Congenital Syphilis, <1 year	127	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	32
Diphtheria	3		

*Nine of the 27 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending October 24, 1987 and October 18, 1986 (42nd Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1987	1987	Cum. 1987	Cum. 1987	Cum. 1987	Cum. 1986	1987	1987	1987	1987	1987	Cum. 1987
UNITED STATES	15,293	235	1,057	87	623,735	715,602	432	445	44	39	21	170
NEW ENGLAND	589	6	37	2	19,370	17,618	15	30	-	3	3	12
Maine	16	-	3	-	586	708	-	1	-	-	-	-
N.H.	22	-	2	-	331	455	-	-	-	-	-	2
Vt.	8	2	5	-	183	217	2	1	-	-	-	-
Mass.	355	3	17	1	6,784	7,223	9	26	-	3	3	9
R.I.	47	1	3	1	1,765	1,456	4	2	-	-	-	-
Conn.	151	-	7	-	9,761	7,557	-	-	-	-	-	1
MID. ATLANTIC	4,489	38	121	7	98,848	121,172	37	51	1	4	2	18
Upstate N.Y.	548	17	43	3	13,528	14,709	17	18	1	-	2	-
N.Y. City	2,891	4	10	-	50,271	69,807	13	29	-	4	-	18
N.J.	880	11	8	-	13,457	15,632	6	4	-	-	-	-
Pa.	450	6	60	4	19,290	21,024	1	2	-	-	-	-
E.N. CENTRAL	986	49	304	12	95,361	97,995	13	39	5	4	4	7
Ohio	199	32	134	5	21,028	24,249	3	9	3	2	3	2
Ind.	87	-	44	-	7,386	10,256	5	2	-	1	-	-
Ill.	474	-	25	7	28,925	23,447	4	4	-	-	-	1
Mich.	145	17	67	-	30,271	29,853	1	24	2	1	1	3
Wis.	81	-	34	-	7,752	10,190	-	-	-	-	-	1
W.N. CENTRAL	326	7	69	-	25,368	30,631	14	14	3	1	2	-
Minn.	80	6	40	-	3,756	4,387	3	8	1	-	-	-
Iowa	22	-	11	-	2,448	3,104	2	1	1	-	2	-
Mo.	165	1	-	-	13,435	15,512	2	3	1	1	-	-
N. Dak.	1	-	1	-	229	271	-	-	-	-	-	-
S. Dak.	2	-	-	-	508	638	-	-	-	-	-	-
Nebr.	19	-	10	-	1,844	2,256	-	-	-	-	-	-
Kans.	38	-	7	-	3,348	4,463	7	2	-	-	-	-
S. ATLANTIC	2,679	62	146	30	163,595	186,014	21	133	7	2	2	5
Del.	19	5	4	1	2,786	3,070	-	-	-	-	-	-
Md.	353	14	16	5	18,551	21,807	2	33	-	-	-	2
D.C.	306	2	-	-	10,882	13,658	-	2	-	-	-	-
Va.	180	15	33	2	12,164	15,240	4	8	3	-	1	-
W. Va.	20	2	53	-	1,192	1,827	-	1	-	-	-	-
N.C.	133	7	24	-	24,089	28,336	2	23	1	-	-	-
S.C.	61	-	1	-	12,875	16,076	3	12	-	-	-	1
Ga.	392	7	1	-	29,372	30,762	2	30	-	-	-	-
Fla.	1,215	10	14	22	51,704	54,438	8	24	3	2	1	2
E.S. CENTRAL	208	19	54	7	47,405	57,489	8	33	2	-	2	-
Ky.	36	5	28	1	4,772	6,335	3	3	2	-	-	-
Tenn.	33	11	12	-	18,525	21,946	1	27	-	-	2	-
Ala.	118	2	16	1	15,092	16,690	2	2	-	-	-	-
Miss.	21	1	-	5	11,016	12,519	2	1	-	-	-	-
W.S. CENTRAL	1,524	10	127	4	71,731	83,205	33	27	5	4	5	4
Ark.	34	-	2	2	6,138	7,708	14	-	1	-	-	-
La.	259	-	20	-	12,413	14,657	1	12	-	-	-	-
Okla.	74	1	22	1	7,741	8,658	2	3	2	2	-	-
Tex.	1,157	9	83	1	43,441	51,182	16	12	2	2	5	4
MOUNTAIN	439	19	67	4	16,417	21,094	78	37	3	6	-	2
Mont.	3	-	1	-	462	567	-	-	-	-	-	-
Idaho	9	-	-	-	590	693	22	1	-	-	-	1
Wyo.	3	-	1	-	362	453	2	-	-	1	-	-
Colo.	179	7	38	-	3,617	5,450	11	6	-	4	-	-
N. Mex.	33	-	5	-	1,813	2,256	-	5	1	-	-	-
Ariz.	136	10	17	1	5,585	6,778	38	23	-	1	-	-
Utah	29	-	1	3	504	661	4	-	2	-	-	-
Nev.	48	2	4	-	3,494	4,016	1	3	-	-	-	1
PACIFIC	4,063	25	132	21	87,842	101,384	213	81	18	15	1	122
Wash.	264	-	10	4	6,867	7,583	80	19	5	2	-	5
Oreg.	123	-	-	-	3,337	4,324	22	8	3	-	-	-
Calif.	3,601	21	117	17	75,614	86,255	107	50	10	13	1	93
Alaska	12	4	2	-	1,436	2,184	4	1	-	-	-	1
Hawaii	73	-	3	-	588	1,038	-	3	-	-	-	23
Guam	3	-	-	-	185	187	-	-	-	-	-	-
P.R.	84	2	1	1	1,633	1,934	-	8	-	-	-	5
V.I.	-	-	-	-	224	227	-	-	-	-	-	-
Pac. Trust Terr.	-	-	-	-	320	402	-	-	-	-	-	40
Amer. Samoa	-	-	-	-	67	42	-	-	-	-	-	-

N: Not notifiable U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending October 24, 1987 and October 18, 1986 (42nd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1987	1987	Cum. 1987	1987	Cum. 1987	Cum. 1986	Cum. 1987	1987	Cum. 1987	1987	Cum. 1987	Cum. 1986	1987	Cum. 1987	Cum. 1986
UNITED STATES	714	18	3,056	9	415	5,831	2,322	91	10,938	44	2,013	3,151	-	313	463
NEW ENGLAND	48	4	118	6	162	96	194	2	48	1	137	140	-	1	9
Maine	2	-	3	-	-	13	10	1	1	-	27	2	-	1	-
N.H.	2	-	61	-	122	43	18	-	10	-	36	73	-	-	1
Vt.	-	-	11	-	15	-	17	1	6	-	4	3	-	-	1
Mass.	19	4	26	6†	38	35	96	-	13	-	42	32	-	-	4
R.I.	7	-	1	-	1	2	14	-	2	1	3	6	-	-	2
Conn.	18	-	16	-	6	3	39	-	16	-	25	24	-	-	1
MID. ATLANTIC	88	-	522	-	57	1,719	294	6	214	7	234	173	-	11	34
Upstate N.Y.	32	-	26	-	14	100	103	1	93	6	135	109	-	9	26
N.Y. City	7	-	443	-	19	888	23	-	10	-	8	10	-	1	5
N.J.	24	-	32	-	7	909	88	2	58	1	14	17	-	1	3
Pa.	25	-	21	-	17	24	112	3	53	-	77	37	-	-	-
E.N. CENTRAL	46	-	327	-	25	1,066	348	28	6,118	2	199	347	-	36	75
Ohio	12	-	1	-	4	19	117	-	88	-	57	146	-	-	1
Ind.	4	-	-	-	-	36	36	-	823	-	16	26	-	-	-
Ill.	7	-	153	-	18	675	83	14	2,526	-	14	37	-	25	65
Mich.	17	-	29	-	-	89	90	13	939	2	47	34	-	9	8
Wis.	6	-	144	-	3	286	22	1	1,642	-	65	104	-	2	1
W.N. CENTRAL	25	-	208	-	22	339	95	8	1,366	8	127	948	-	1	13
Minn.	8	-	19	-	20	49	28	-	774	-	13	45	-	-	1
Iowa	6	-	-	-	-	134	3	6	412	7	55	19	-	1	1
Mo.	6	-	188	-	1	31	28	2	28	1	31	18	-	-	1
N. Dak.	-	-	1	-	-	25	1	-	6	-	11	5	-	-	1
S. Dak.	-	-	-	-	-	-	2	-	90	-	3	14	-	-	-
Nebr.	6	-	-	-	-	1	6	-	4	-	1	7	-	-	-
Kans.	1	-	-	-	1	99	29	-	52	-	13	740	-	-	9
S. ATLANTIC	120	9	140	-	12	748	380	7	267	3	292	716	-	18	7
Del.	1	-	32	-	-	1	5	-	-	-	5	227	-	2	-
Md.	27	1	6	-	2	35	36	1	28	1	17	161	-	3	-
D.C.	15	-	-	-	1	2	7	-	1	-	-	-	-	1	-
Va.	24	-	1	-	-	60	62	1	73	-	49	36	-	1	-
W. Va.	2	-	-	-	-	2	3	1	36	1	50	23	-	-	-
N.C.	11	-	2	-	3	4	46	1	25	1	116	66	-	1	-
S.C.	6	-	2	-	-	301	35	1	16	-	-	18	-	-	-
Ga.	4	8	8	-	1	93	78	-	40	-	23	128	-	2	-
Fla.	30	-	89	-	5	246	106	2	50	-	32	57	-	8	7
E.S. CENTRAL	13	-	3	-	3	67	118	10	1,262	1	41	49	-	3	4
Ky.	1	-	-	-	-	6	21	4	220	1	2	5	-	2	4
Tenn.	1	-	-	-	-	56	49	6	962	-	12	18	-	1	-
Ala.	5	-	1	-	3	2	40	-	60	-	21	25	-	-	-
Miss.	6	-	2	-	-	3	8	N	N	-	6	1	-	-	-
W.S. CENTRAL	49	1	444	-	4	648	165	25	1,079	-	259	219	-	11	63
Ark.	1	-	-	-	-	283	20	1	290	-	12	17	-	2	-
La.	1	-	-	-	-	4	21	24	537	-	47	13	-	-	-
Okla.	4	1	3	-	1	39	21	N	N	-	149	106	-	5	-
Tex.	43	-	441	-	3	322	103	-	251	-	51	83	-	4	63
MOUNTAIN	34	-	481	-	19	329	79	-	210	1	162	239	-	24	23
Mont.	1	-	127	-	1	8	4	-	6	-	6	14	-	8	2
Idaho	2	-	-	-	-	1	5	-	5	-	46	41	-	1	-
Wyo.	1	-	-	-	2	-	-	-	-	-	5	4	-	1	1
Colo.	7	-	5	-	4	10	26	-	28	1	56	63	-	-	1
N. Mex.	2	-	313	-	9	38	5	N	N	-	11	20	-	-	-
Ariz.	17	-	34	-	1	258	25	-	155	-	30	56	-	4	2
Utah	1	-	-	-	1	12	9	-	12	-	8	37	-	10	14
Nev.	3	-	2	-	1	2	4	-	4	-	-	4	-	-	3
PACIFIC	291	4	815	3	111	621	650	5	374	21	562	420	-	208	235
Wash.	21	-	34	3†	10	164	72	1	47	4	81	139	-	2	16
Oreg.	5	3	11	-	80	12	26	N	N	-	65	12	-	2	3
Calif.	261	1	770	-	17	417	537	4	305	5	201	253	-	133	211
Alaska	3	-	-	-	-	-	5	-	7	-	5	2	-	2	-
Hawaii	1	-	-	-	4	28	10	-	15	12	210	14	-	69	5
Guam	-	-	2	-	-	5	5	-	5	-	-	-	-	1	4
P.R.	1	-	755	-	-	36	5	1	12	-	16	17	-	3	61
V.I.	-	-	-	-	-	-	-	-	13	-	-	-	-	1	-
Pac. Trust Terr.	-	-	1	-	-	-	1	-	5	-	1	-	-	1	2
Amer. Samoa	-	1	1	-	-	2	-	1	6	-	-	-	-	-	1

*For measles only, imported cases includes both out-of-state and international importations.
N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending October 24, 1987 and October 18, 1986 (42nd Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tularemia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1987	Cum. 1986	1987	Cum. 1987	Cum. 1986	Cum. 1987	Cum. 1987	Cum. 1987	Cum. 1987
UNITED STATES	28,531	21,233	6	16,986	17,590	169	283	568	3,815
NEW ENGLAND	491	390	-	526	568	1	26	7	7
Maine	1	17	-	22	34	-	1	-	3
N.H.	3	10	-	18	26	-	-	-	-
Vt.	2	8	-	10	15	-	1	-	-
Mass.	231	207	-	294	309	1	14	4	-
R.I.	10	19	-	50	41	-	3	-	1
Conn.	244	129	-	132	143	-	7	3	3
MID. ATLANTIC	5,366	3,018	1	2,983	3,509	1	29	23	336
Upstate N.Y.	188	161	1	408	499	1	8	11	52
N.Y. City	3,997	1,704	-	1,438	1,842	-	3	5	-
N.J.	982	528	-	553	594	-	18	1	15
Pa.	619	625	-	594	574	-	-	6	269
E.N. CENTRAL	747	721	1	1,822	2,081	3	30	44	143
Ohio	84	101	1	349	368	1	8	29	14
Ind.	50	93	-	188	232	-	4	-	17
Ill.	401	351	-	843	892	-	9	7	43
Mich.	158	141	-	457	492	-	5	5	26
Wis.	54	36	-	85	97	2	3	3	43
W.N. CENTRAL	152	173	1	480	526	60	10	53	808
Minn.	14	29	1	96	121	-	5	-	197
Iowa	25	7	-	32	44	4	2	1	231
Mo.	72	90	-	267	260	38	3	18	52
N. Dak.	-	6	-	8	10	1	-	-	92
S. Dak.	11	7	-	23	23	9	-	1	184
Nebr.	10	12	-	23	13	2	-	3	16
Kans.	20	22	-	41	55	6	-	30	36
S. ATLANTIC	9,804	6,439	1	3,887	3,447	5	28	208	1,071
Del.	63	51	-	34	38	1	-	2	-
Md.	519	388	-	327	256	-	4	45	365
D.C.	292	247	-	135	122	-	2	-	40
Va.	259	292	1	383	280	2	6	18	297
W. Va.	10	19	-	84	102	-	1	7	56
N.C.	557	419	-	424	480	2	3	75	8
S.C.	618	580	-	381	447	-	-	33	49
Ga.	1,373	1,217	-	628	586	-	-	26	174
Fla.	6,113	3,285	-	1,291	1,169	-	12	2	82
E.S. CENTRAL	1,550	1,424	-	1,487	1,569	7	4	93	258
Ky.	17	60	-	347	351	2	2	10	122
Tenn.	594	504	-	422	460	1	1	58	57
Ala.	414	433	-	456	494	1	1	15	72
Miss.	525	427	-	272	264	3	-	10	7
W.S. CENTRAL	3,563	4,252	2	2,014	2,212	85	23	116	515
Ark.	214	202	-	248	308	33	2	12	111
La.	656	734	-	222	348	3	-	-	13
Okla.	135	113	2	193	209	26	5	86	30
Tex.	2,558	3,203	-	1,353	1,351	3	16	17	361
MOUNTAIN	556	474	-	404	431	15	14	12	319
Mont.	9	8	-	11	21	2	-	10	142
Idaho	5	13	-	17	20	1	-	-	8
Wyo.	3	2	-	-	-	-	-	1	67
Colo.	95	108	-	40	48	4	-	-	7
N. Mex.	48	54	-	75	63	1	9	-	3
Ariz.	283	195	-	211	200	3	4	-	72
Utah	22	15	-	24	29	2	-	1	7
Nev.	111	81	-	26	30	2	1	-	13
PACIFIC	6,302	4,342	-	3,483	3,227	12	99	3	358
Wash.	120	138	-	201	180	4	7	-	-
Oreg.	248	92	-	100	107	5	2	1	-
Calif.	5,918	4,082	-	2,969	2,773	2	83	2	355
Alaska	3	-	-	57	48	1	-	-	3
Hawaii	12	30	-	159	141	-	7	-	-
Guam	2	1	-	26	34	-	-	-	-
P.R.	757	723	-	259	288	-	-	-	56
V.I.	9	1	-	2	1	-	-	-	-
Pac. Trust Terr.	190	214	-	139	60	-	19	-	-
Amer. Samoa	2	-	-	1	5	-	1	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending October 24, 1987 (42nd Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	>65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	721	495	133	57	11	25	64
Boston, Mass.	218	140	38	25	4	11	26
Bridgeport, Conn.	47	31	12	3	-	1	7
Cambridge, Mass.	28	22	3	3	-	-	2
Fall River, Mass.	31	25	4	2	-	-	-
Hartford, Conn.	75	47	16	7	1	4	5
Lowell, Mass.	28	22	5	-	1	-	2
Lynn, Mass.	22	17	4	1	-	-	1
New Bedford, Mass.	27	21	4	2	-	-	2
New Haven, Conn.	35	20	8	4	2	1	4
Providence, R.I.	46	28	12	2	1	3	2
Somerville, Mass.	6	4	1	-	-	1	-
Springfield, Mass.	45	35	6	3	-	1	5
Waterbury, Conn.	41	29	10	1	-	1	2
Worcester, Mass.	72	54	10	4	2	2	6
MID. ATLANTIC	2,845	1,852	572	302	57	60	132
Albany, N.Y.	56	41	11	4	-	-	2
Allentown, Pa.	23	10	10	2	1	-	-
Buffalo, N.Y.	116	93	16	6	1	-	11
Camden, N.J.	39	27	7	3	1	1	-
Elizabeth, N.J.	25	17	4	4	-	-	-
Erie, Pa.†	47	32	10	3	1	1	2
Jersey City, N.J.	52	32	8	7	2	3	2
N.Y. City, N.Y.	1,462	905	300	192	35	30	60
Newark, N.J.	97	48	25	18	2	3	7
Paterson, N.J.	25	15	7	3	-	-	-
Philadelphia, Pa.	395	269	77	27	9	13	18
Pittsburgh, Pa.†	76	49	21	2	1	3	3
Reading, Pa.	41	33	5	2	-	1	1
Rochester, N.Y.	105	72	19	10	1	3	5
Schenectady, N.Y.	29	24	4	1	-	-	1
Scranton, Pa.†	36	25	8	3	-	-	-
Syracuse, N.Y.	113	84	21	5	1	2	10
Trenton, N.J.	44	25	10	8	1	-	3
Utica, N.Y.	25	20	5	-	-	-	4
Yonkers, N.Y.	39	31	4	2	1	-	3
E.N. CENTRAL	2,475	1,613	548	183	54	96	94
Akron, Ohio	84	52	20	8	-	4	5
Canton, Ohio	28	20	2	3	2	1	3
Chicago, Ill.§	584	362	125	48	10	22	16
Cincinnati, Ohio	208	127	52	14	5	10	11
Cleveland, Ohio	135	79	38	12	3	3	1
Columbus, Ohio	179	125	33	10	4	7	-
Dayton, Ohio	110	75	27	3	2	3	8
Detroit, Mich.	269	147	73	23	6	20	8
Evansville, Ind.	66	54	8	4	-	-	4
Fort Wayne, Ind.	60	42	13	3	2	-	6
Gary, Ind.	25	14	5	4	-	2	1
Grand Rapids, Mich.	60	47	9	1	2	1	4
Indianapolis, Ind.	189	101	41	11	3	13	3
Madison, Wis.	44	32	5	1	2	4	2
Milwaukee, Wis.	148	104	31	8	2	3	4
Peoria, Ill.	43	28	12	1	1	1	3
Rockford, Ill.	45	31	9	1	3	1	4
South Bend, Ind.	56	42	8	1	4	-	3
Toledo, Ohio	136	95	30	9	1	1	8
Youngstown, Ohio	46	36	7	1	2	-	-
W.N. CENTRAL	773	541	130	46	34	22	43
Des Moines, Iowa	55	42	9	1	2	1	4
Duluth, Minn.	32	23	6	2	1	-	-
Kansas City, Kans.	42	31	8	3	-	-	1
Kansas City, Mo.	112	83	14	6	8	1	7
Lincoln, Nebr.	43	32	5	4	1	1	5
Minneapolis, Minn.	133	90	20	11	7	5	9
Omaha, Nebr.	106	71	18	5	8	4	2
St. Louis, Mo.	143	90	31	8	5	9	6
St. Paul, Minn.	37	31	2	4	-	-	-
Wichita, Kans.	70	48	17	2	2	1	9
S. ATLANTIC	1,281	815	260	112	45	48	68
Atlanta, Ga.	168	121	21	13	7	6	6
Baltimore, Md.	201	128	43	20	3	7	13
Charlotte, N.C.§	78	50	16	6	4	2	4
Jacksonville, Fla.	156	94	33	14	8	7	1
Miami, Fla.	120	59	38	14	7	2	1
Norfolk, Va.	64	34	13	10	3	4	6
Richmond, Va.	90	67	17	1	1	4	7
Savannah, Ga.	42	26	8	3	-	5	6
St. Petersburg, Fla.	84	70	7	3	2	2	3
Tampa, Fla.	76	53	13	6	2	2	11
Washington, D.C.	165	82	49	20	6	7	8
Wilmington, Del.	37	31	2	2	2	-	2
E.S. CENTRAL	645	402	152	44	27	20	27
Birmingham, Ala.	106	62	26	7	4	7	2
Chattanooga, Tenn.	60	43	11	3	1	2	6
Knoxville, Tenn.	64	42	16	3	-	3	2
Louisville, Ky.	99	68	22	3	3	3	2
Memphis, Tenn.	109	65	24	12	8	-	5
Mobile, Ala.	63	39	16	4	4	1	-
Montgomery, Ala.	19	11	4	4	-	-	-
Nashville, Tenn.	125	73	33	8	7	4	10
W.S. CENTRAL	1,360	830	305	130	48	47	66
Austin, Tex.	54	38	7	6	2	2	5
Baton Rouge, La.	55	39	12	1	2	1	3
Corpus Christi, Tex.	50	28	15	5	1	1	2
Dallas, Tex.	177	100	46	17	6	9	6
El Paso, Tex.	62	42	10	6	4	-	3
Fort Worth, Tex	89	52	19	8	2	8	5
Houston, Tex.§	308	176	74	34	13	11	7
Little Rock, Ark.	76	47	24	4	-	1	2
New Orleans, La.	143	90	32	15	6	-	-
San Antonio, Tex.	186	114	40	18	7	7	17
Shreveport, La.	89	51	10	3	7	5	5
Tulsa, Okla.	91	53	17	14	5	2	11
MOUNTAIN	654	447	119	53	15	21	24
Albuquerque, N. Mex.	84	58	12	8	4	2	1
Colo. Springs, Colo.	46	30	7	6	2	1	4
Denver, Colo.	125	80	27	11	2	5	2
Las Vegas, Nev.	91	62	18	7	3	1	6
Ogden, Utah	20	13	3	2	2	-	3
Phoenix, Ariz.	133	91	28	7	2	5	4
Pueblo, Colo.	29	19	6	4	-	-	1
Salt Lake City, Utah	36	20	10	3	-	5	-
Tucson, Ariz.	88	74	7	5	-	2	4
PACIFIC	1,958	1,277	384	187	58	67	111
Berkeley, Calif.	17	15	2	-	-	-	1
Fresno, Calif.	88	56	15	6	4	7	5
Glendale, Calif.	34	22	8	3	1	-	2
Honolulu, Hawaii	76	59	10	3	3	1	9
Long Beach, Calif.	119	76	25	10	2	6	3
Los Angeles Calif.	550	353	102	67	16	8	22
Oakland, Calif.	78	53	14	4	3	3	7
Pasadena, Calif.	31	20	6	2	1	2	1
Portland, Oreg.	125	92	15	12	2	4	6
Sacramento, Calif.	157	98	31	19	2	7	9
San Diego, Calif.	131	76	26	13	10	6	12
San Francisco, Calif.	155	90	36	20	3	6	5
San Jose, Calif.	171	112	37	11	3	8	12
Seattle, Wash.	130	82	23	11	8	6	5
Spokane, Wash.	60	44	9	5	-	2	6
Tacoma, Wash.	36	29	5	1	-	1	6
TOTAL	12,712††	8,272	2,582	1,094	349	406	629

*Mortality data in this table are voluntarily reported from 121 cities in the United states, most of which have populations of 100,000 o more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are no included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Data not available. Figures are estimates based on average of past 4 weeks.

TABLE V. Estimated years of potential life lost before age 65 and cause-specific mortality, by cause of death — United States, 1985

Cause of mortality (Ninth Revision ICD)	YPLL for persons dying in 1985*	Cause-specific mortality, 1985† (rate/100,000)
ALL CAUSES (Total)	11,844,475	874.8
Unintentional injuries§ (E800-E949)	2,235,064	38.6
Malignant neoplasms (140-208)	1,813,245	191.7
Diseases of the heart (390-398,402,404-429)	1,600,265	325.0
Suicide, homicide (E950-E978)	1,241,688	20.1
Congenital anomalies (740-759)	694,715	5.5
Prematurity¶ (765, 769)	444,931	2.9
Sudden infant death syndrome (798)	313,386	2.0
Cerebrovascular disease (430-438)	253,044	64.0
Chronic liver diseases and cirrhosis (571)	235,629	11.2
Pneumonia and influenza (480-487)	168,949	27.9
Acquired immunodeficiency syndrome (AIDS)**	152,595	2.3
Chronic obstructive pulmonary diseases (490-496)	129,815	31.2
Diabetes mellitus (250)	128,229	16.2

*For details of calculation, see footnotes to Table V, *MMWR* 1987;36:56.
†Cause-specific mortality rates as reported in the National Center for Health Statistics' *Monthly Vital Statistics Report* are compiled from a 10% sample of all deaths.
§Equivalent to accidents and adverse effects.
¶Category derived from disorders relating to short gestation and respiratory distress syndrome.
**Reflects CDC surveillance data.

Influenza – Continued

persons with underlying diseases that increase their likelihood of having complications from viral or secondary bacterial infections. In addition, physicians, nurses, or family members (including children) who might transmit infections to high-risk persons should be vaccinated.

Vaccine should be routinely provided during this season for the above high-risk persons and their close medical or family contacts. These persons should be actively identified and informed about the advisability of pre-winter vaccination against influenza. Pneumococcal vaccination history should also be determined for high-risk persons, and this vaccine should be administered simultaneously with influenza vaccine to persons who have not already received it. Booster doses of pneumococcal vaccine should not be given. For further information at the local level, contact state or county health departments, or the American Lung Association.

References

1. Immunization Practices Advisory Committee. Prevention and control of influenza. MMWR 1987;36:373-80,385-7.
2. Douglas RG, ed. Proceedings of a symposium: prevention, management, and control of influenza: a mandate for the 1980s. Am J Med 1987;82(suppl 6A): 1-69.

Topics in Minority Health

Regional Differences in Postneonatal Mortality – Mississippi, 1980-1983

Mississippi's postneonatal mortality risk is one of the highest among U.S. states. To counter this trend, the Mississippi State Department of Health studied regional differences in postneonatal mortality using linked birth and infant death certificates for 1980-1983.

This certificate linkage provides information on known risk factors for postneonatal mortality that is not routinely collected on death certificates (i.e., maternal age, education, and marital status and infant birthweight and Apgar score). The study was restricted to single-gestation, live-born infants of Mississippi residents, infants who weighed >500 g and <8,165 g at birth, and infants who lived beyond the neonatal period (the first 28 days of life). From 1980 through 1983, 876 deaths occurred among these 178,196 postneonates, for a postneonatal mortality risk of 4.9 deaths/1,000 postneonates.

For this 4-year period, the postneonatal mortality risks varied substantially among the nine Mississippi public health districts, from 3.8 postneonatal deaths per 1,000 postneonates in Districts II and IX to 6.8 in District III (Figure 1). Public health districts were chosen as the geographic unit of analysis because of the limited number of postneonatal deaths occurring in many counties, the roughly homogenous composition of the districts, and the fact that most interventions to reduce regional differences would be initiated through these districts. To screen for districts with substantially higher or lower mortality risks than that of the state, investigators used indirect standardization to adjust for race, gender, and birthweight in a method similar to that of Williams (*1*). After standardization, the risks in Districts I and III, the two northwest districts in the Mississippi Delta region, were significantly higher than the risk for the state, and no district had a significantly lower mortality risk.

A differing mortality pattern was identified by districts when postneonatal mortality risks were examined by race (Figure 1). When the risks of black and other races*

*Because approximately 97% of the postneonates in the black and other races category are black, this category will be referred to as black.

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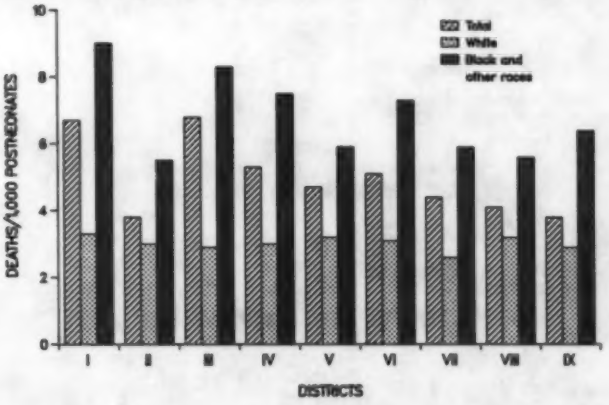
were compared with those of whites by districts, the mortality risks for black postneonates ranged from 1.8 to 2.9 times higher. The mortality risks for white postneonates alone varied little, from 2.6 postneonatal deaths/1,000 postneonates in District VII to 3.3 in District I; no district had a white postneonatal mortality risk statistically different from the state's risk. The mortality risks for black postneonates varied from 5.5 in District II to 9.0 and 8.3 in Districts I and III, respectively. By indirect standardization, the risks for black postneonates in Districts I and III were significantly higher than the state's risk for blacks, and no district had a significantly lower risk. Most of the district variations in the postneonatal mortality risks for all races combined occurred because of the wide variation in black postneonatal mortality risks.

To examine the higher mortality risks among black postneonates in Districts I and III, investigators completed a series of district-specific analyses comparing each of these two districts with the other seven districts. Black postneonates in District I had a mortality risk 1.5 times higher than black postneonates in the seven comparison districts (95% confidence limits [CL] = 1.2, 1.9). Adjusting for maternal age, education, marital status, use of prenatal care, and infant birthweight did not substantially alter this comparison.

Further comparisons demonstrated that 1) the higher relative risk for mortality in District I occurred throughout the postneonatal period, and 2) the higher mortality risk was not related to any particular season of the year. However, one important difference was identified. Twenty-four percent of deaths among black postneonates in District I occurred in a hospital or clinic, compared with 44% in other districts ($p = 0.001$). Moreover, roughly 56% of white postneonatal deaths in District I and in other districts occurred in a hospital or clinic.

In relation to the underlying cause of death (Figure 2), black postneonates in District I had a mortality risk difference of 2.8 deaths/1,000 postneonates. Sudden infant death syndrome (SIDS) accounted for 2.0 (71%) of the risk difference; injuries and unknown cause of death accounted for the remainder. However, the confidence

FIGURE 1. Postneonatal mortality risks, by race and district — Mississippi, 1980-1983



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in attributing most of this difference to SIDS is weakened because autopsies were performed in only 4% of deaths among black postneonates in District I.

The findings for black postneonates in District III were similar to those in District I except that postneonates with birthweight <2,500 g accounted for most of the higher mortality risks. Black postneonates in District III weighing <2,500 g, compared with postneonates of the same race and birthweight in the seven comparison districts, had a relative mortality risk of 1.7 (95% CL = 1.3, 2.4), whereas the relative mortality risk for postneonates weighing ≥2,500 g at birth was only 1.1 (95% CL = 0.86, 1.4). Analyses attempting to explain the higher risk in this lower birthweight group provided little information except that 40% of the deaths among these black postneonates in District III occurred in a hospital compared with 55% for black postneonates in the other seven districts, 67% for white postneonates in District III, and 75% for white postneonates statewide.

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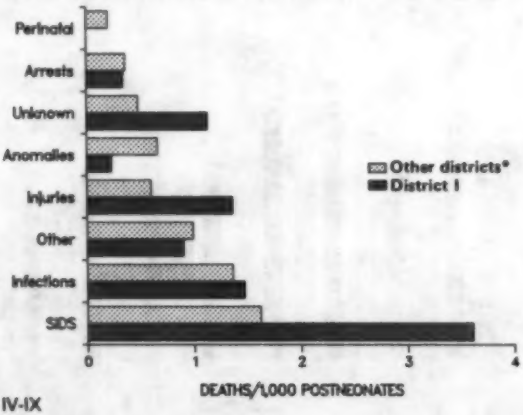
Editorial Note: This study identified two major disparities in postneonatal mortality risks: 1) statewide, black postneonates had higher risks than white postneonates, and 2) in Districts I and III, black postneonates had higher risks than black postneonates in the seven comparison districts.

The twofold higher mortality risk of black postneonates is an ongoing problem in the United States as well as in Mississippi (*2*). Mississippi's higher postneonatal mortality rate compared with other states is partly related to a higher percentage of black births in Mississippi. Moreover, the state had the third highest postneonatal mortality rate in the nation for black and other races in 1983 (*3*).

Beyond the higher overall risk for black compared with white postneonates, the study showed that black postneonates born in Districts I and III had even higher mortality risks than those born in the other seven districts. If the mortality risks for

FIGURE 2. Postneonatal mortality risks, by underlying cause of death, black and other races — Mississippi, 1980-1983



*Districts II and IV-IX

Postneonatal Mortality — Continued

these postneonates could be lowered to those of the other districts, the mortality risk for black postneonates statewide would decrease 10%—a drop greater than that experienced by the state over the last 4 years.

The disparity among health districts went largely unexplained for two reasons. First, information on the underlying cause of death was inadequate. Given the low percentage of autopsies and the completion of many death certificates by non-medically trained coroners, the classification of the cause of death as SIDS or unknown is uninformative. An autopsy is essential in the diagnosis of SIDS to eliminate other likely causes of death. Without it, caution must be used in attributing an increased mortality in Districts I and III to SIDS. Second, although the birth and death certificates include many of the risk indicators for postneonatal mortality, additional medical and social information is not available, such as perinatal morbidity, additional medical history, present illness information, health-care participation, immunization status, financial status, home environment, and parenting skills.

Mississippi has taken direct action to remedy both of these problems, including changing its laws concerning coroners and coroner cases and increasing its number of completed autopsies. Mississippi's physicians and hospitals can also assist in remedying the problem by encouraging autopsies involving both coroner and non-coroner cases and by using autopsy results to more accurately assign the causes of death. More accurate causes of death should help delineate the role of SIDS in the higher black postneonatal mortality in Districts I and III.

In addition, the Mississippi State Department of Health is developing studies to address possible interventions in Districts I and III. These two districts include counties with some of the highest levels of poverty in the country. Although adjustment for maternal education only slightly reduced the RR for mortality, better measures of socioeconomic status might reflect the findings of prior studies that the higher mortality experienced by poor families is primarily mediated through poorer access to or utilization of medical care (*4,5*). This study's finding of the lack of hospitalization at the time of death suggests that access to health-care facilities may be a problem for those families.

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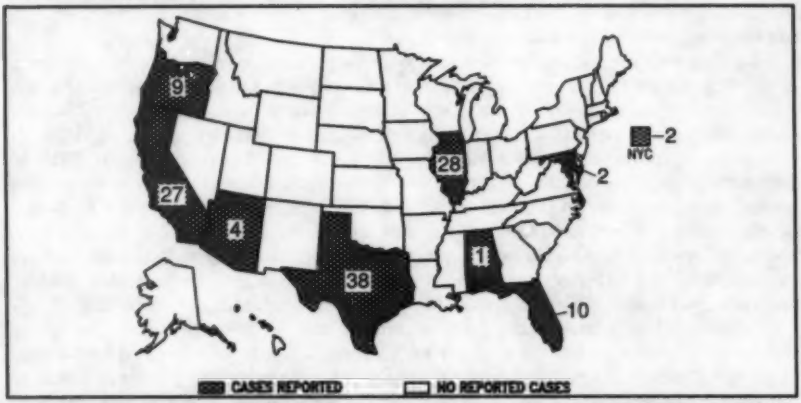
Errata: Vol. 36, Nos. 33 and 38

p. 550 The P.A.G.E.S. program is partially supported by a grant from the Foundation of the March of Dimes. The name of S.R. Potsic, M.D., M.P.H., was omitted from the list of reportees from the Lake County Health Department.

p. 641 The first sentence in the second paragraph on page 641 should have read, "Based on several methods of measurement, overall motor vehicle-related fatality rates decreased during the period 1960-1985."

FIGURE I. Reported measles cases — United States, Weeks 38-41, 1987



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